Ultrasound Guided Volume Assessment

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Outline

• IVC Ultrasound Technique
• Clinical Use of IVC Ultrasound
• Clinical Cases
IVC Ultrasound Exam

- Exam Technique
- Goals of the Exam
- Pitfalls
Probe Selection
Hypovolemia

Hypervolemia
Hypovoleemia

Hypervoleemia
The “Sniff” Test

Hypovolemia

Hypervolemic
Caval Index

EXP

A 1.96cm

INSPI

A 1.35cm
Ultrasound Protocols

1. Cardiac Ultrasound
   • RUSH

2. Lung Ultrasound
   • RADIUS

3. IVC Ultrasound
   • Triple Scan
Goals of the Exam

Evaluate Pump Function

Assess for Pulmonary Edema

Interrogate IVC
Protocol

1. Cardiac Ultrasound
2. Lung Ultrasound
3. IVC Ultrasound
Clinical Cases
Septic
Pulmonary Embolism
Take Home Points

• Distinguish IVC from Aorta
• Eval IVC 2cm distal to RA-IVC junction
• Use in conjunction with Cardiac and Lung ULS
• Remember Conditions with ↑R Cardiac Pressure
• Serial Exams during resuscitation
References

- Tetsuka T, Ando Y, Ono S, Asano Y. Change in inferior vena cava diameter detected by ultrasonography during and after hemodialysis. ASAIO J 1995;41:105 - 10
References


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• Wu Ding W, Yuehong S, Yang J. Diagnosis of Pneumothorax by Radiography and Ultrasonography. CHEST.140 (4) OCTOBER, 2011
Thank You